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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.      | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------|------------------|
| 09/611,879   | 07/07/2000  | Timothy M. Schmidl   | TI-30718                 | 7397             |
| 7590   | 10/18/2004  |                      | EXAMINER<br>HO, CHUONG T |                  |
| Ronald O Neerings<br>Texas Instruments Incorporated<br>P O Box 655474 M S 3999<br>Dallas, TX 75265 |             |                      | ART UNIT<br>2664         | PAPER NUMBER     |

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/611,879 | <b>Applicant(s)</b> <br>SCHMIDL ET AL. |  |
|                              | <b>Examiner</b><br>Chuong Ho         | <b>Art Unit</b><br>2664  |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-7 is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 8-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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1. The amendment filed 07/07/04 have been entered and made of record.
2. Applicant's amendment with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.
3. Claims 1-22 are pending.

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kou (U.S. Patent No. 5,303,234) in view of Takiyasu et al. (U.S. Patent No. 5,537,414).

In the claim 1, Kou discloses the central station (first wireless communication device) monitors (determining) the defined monislots to detect the burst transmission, and assign as many timeslots as required if more than one burst transmission is detected within a timeslot interval. A slot assignment signal is sent from the central station to the user station containing a negative acknowledgement (NAK) of the transmission packet. The user station (wireless communication devices) from which the packet was transmitted is responsive to the negative acknowledgement (NAK) to select one of the assigned timeslots and retransmit to the central station a copy of the packet on the selected assigned timeslot (see abstract); comprising:

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The first device (central station) attempting to perform a plurality of communication with the further devices via a wireless communication link (see figure 1) during respective transmission time slots of a transmission period that have assigned to the respective communication (see abstract, figure 4, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

The first device (central station) determining which of communications has been successfully (ACK) (see figure 3) performed and which of communications has not been successfully (NAK) (see figure 3) performed (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

However, Kou is silent to disclosing for each of the further communications, one of the first device and the further devices transmitting the further communication via the wireless communication link during the retransmission time slot assigned to the further communication.

Takiyasu et al. discloses responsive to determining step, the first device (base station 3a) assigning to respective retransmission time slots of a retransmission period a plurality of further communications between the first device (base station 3a) and the further device (source stations 2a) (see figure 3, col. 15, lines 26-30, if the data failed to be received at the destination station 2b was also failed to be received at the base station, the base station assigns the next fragment slot  $38i+1$  (retransmission time slot) to the source station. In this case, control information indicating to retransmit data from

the source station is set to a portion (ND field 46 of the header of the fragment slot  $38i+1$  (retransmission slot step 15));

For each of the further communications, one of the first device (base station 3a) and the further devices (source stations 2a) transmitting the further communication via the wireless communication link (see figure 1) during the retransmission time slot assigned to the further communication (see figure 3, col. 15, lines 26-30, if the data failed to be received at the destination station 2b was also failed to be received at the base station, the base station assigns the next fragment slot  $38i+1$  (retransmission time slot) to the source station. In this case, control information indicating to retransmit data from the source station is set to a portion (ND field 46 of the header of the fragment slot  $38i+1$  (retransmission slot step 15)).

Thus, it would have been obvious to one of ordinary time skill in the art at the time of the invention to modify the system of Kou with the teaching of Takiyasu to provide one of the first device and the further devices transmitting the further communication via the wireless communication link during the retransmission time slot assigned to the further communication in order to retransmit the lost data. Therefore, the combined system would have been enable to guaranteed reliability.

3. In the claim 2, Kou discloses communications each include a transfer of a packet of information between the first device (central station) and one of the further devices (user stations) (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23).

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4. In the claim 17, Kou discloses the central station (first wireless communication device) monitors (determining) the defined monislots to detect the burst transmission, and assign as many timeslots as required if more than one burst transmission is detected within a timeslot interval. A slot assignment signal is sent from the central station to the user station containing a negative acknowledgement (NAK) of the transmission packet. The user station (wireless communication devices) from which the packet was transmitted is responsive to the negative acknowledgement (NAK) to select one of the assigned timeslots and retransmit to the central station a copy of the packet on the selected assigned timeslot (see abstract); comprising:

The first device (central station) attempting to perform a plurality of communication with the further devices via a wireless communication link (see figure 1) during respective transmission time slots of a transmission period that have assigned to the respective communication (see abstract, figure 4, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

The first device (central station) determining which of communications has been successfully (ACK) (see figure 3) performed and which of communications has not been successfully (NAK) (see figure 3) performed (see abstract, figure 4, figure 8, col. 1, lines 27-30, lines 52-60, col. 2, lines 58-60, col. 3, lines 23-30, col. 4, lines 57-67, col. 5, lines 27-30, col. 6, lines 9-23);

However, Kou is silent to disclosing for each of the further communications, one of the first device and the further devices transmitting the further communication via the

wireless communication link during the retransmission time slot assigned to the further communication.

Takiyasu et al. discloses responsive to determining step, the first device (base station 3a) assigning to respective retransmission time slots of a retransmission period a plurality of further communications between the first device (base station 3a) and the further device (source stations 2a) (see figure 3, col. 15, lines 26-30, if the data failed to be received at the destination station 2b was also failed to be received at the base station, the base station assigns the next fragment slot  $38i+1$  (retransmission time slot) to the source station. In this case, control information indicating to retransmit data from the source station is set to a portion (ND field 46 of the header of the fragment slot  $38i+1$  (retransmission slot step 15));

For each of the further communications, one of the first device (base station 3a) and the further devices (source stations 2a) transmitting the further communication via the wireless communication link (see figure 1) during the retransmission time slot assigned to the further communication (see figure 3, col. 15, lines 26-30, if the data failed to be received at the destination station 2b was also failed to be received at the base station, the base station assigns the next fragment slot  $38i+1$  (retransmission time slot) to the source station. In this case, control information indicating to retransmit data from the source station is set to a portion (ND field 46 of the header of the fragment slot  $38i+1$  (retransmission slot step 15)).

Thus, it would have been obvious to one of ordinary time skill in the art at the time of the invention to modify the system of Kou with the teaching of Takiyasu to

provide one of the first device and the further devices transmitting the further communication via the wireless communication link during the retransmission time slot assigned to the further communication in order to retransmit the lost data. Therefore, the combined system would have been enable to guaranteed reliability.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Kou – Takiyasu) in view of Takiyasu (U.S.Patent No. 5,862,142).

In the claim 8, the combined system (Kou-Takiyasu) discloses the limitations of claim 1 above.

However, the combined system (Kou – Takiyasu) is silent to disclosing the first device is master device (base station) and the further devices are slave devices (user devices), assigning step including the first device assigning to a first retransmission time slot a first communication from the first device to one of the further devices and assigning to a second retransmission time slot adjacent the first retransmission time slot a second communication from the first device to one of the further devices.

Takiyasu (5862142) discloses the first device is master device (base station) and the further devices are slave devices (user devices), assigning step including the first device assigning to a first retransmission time slot a first communication from the first



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device to one of the further devices and assigning to a second retransmission time slot adjacent the first retransmission time slot a second communication from the first device to one of the further devices (see col. 6, lines 65-67, col. 12, lines 25-30).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of the combined system (Kou-Takiyasu) with the teaching of Takiyasu (5862142) to assign to a first retransmission time slot a first communication from the first device to one of the further devices and assigning to a second retransmission time slot adjacent the first retransmission time slot a second communication from the first device to one of the further device in order to recover for lost data packets.

7. In the claim 9, Takiyasu (5862142) discloses the first and the second communications are different from one another (see figure 10, col. 12, lines 25-30).

8. In the claim 10, Takiyasu (5862142) discloses the first and second communications are both communications from the first device to the same one of the further devices (see figure 10, col. 12, lines 25-30).

9. In the claim 11, Takiyasu (5862142) discloses the first and second communications are the same communication (see figure 10, col. 12, lines 25-30).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takiyasu et al. (U.S. Patent No. 5,537,414) in view of Takiyasu (U.S. Patent No. 5,862,142).

In the claim 13, Takiyasu et al. discloses the first device attempting to perform a plurality of communications with the further devices via a wireless communication link during respective transmission time slots of a transmission period that have been assigned to the respective communications (see figure 3, col. 15, lines 26-30, if the data failed to be received at the destination station 2b was also failed to be received at the base station, the base station assigns the next fragment slot  $38i+1$  (retransmission time slot) to the source station. In this case, control information indicating to retransmit data from the source station is set to a portion (ND field 46 of the header of the fragment slot  $38i+1$  (retransmission slot step 15));

Responsive to detecting step, the first device assigning to a retransmission time slot of a retransmission period a further communication from the first device to further devices which indicates that the retransmission period will change in length; and the first device transmitting the further communication via the wireless communication link during the retransmission time slot assigned to the further communication (see figure 3, col. 15, lines 26-30, if the data failed to be received at the destination station 2b was also failed to be received at the base station, the base station assigns the next fragment slot  $38i+1$  (retransmission time slot) to the source station. In this case, control information indicating to retransmit data from the source station is set to a portion (ND field 46 of the header of the fragment slot  $38i+1$  (retransmission slot step 15));

However, Takiyasu (5537414) is silent to disclosing the first device detecting a change in membership of group of further devices.

Takiyasu (5862142) discloses the base station #5 is assumed to be master base station... the other four base stations #1 to #4, that is, the slave base stations, operate to hop the carrier frequencies synchronously by the master base station (see col. 6, lines 65-67); comprising:

The first device detecting a change in membership of group of further devices (see col.5, lines 48-50, col.6, lines 17-20, col.12. lines 25-30).

Thus, it would have been obvious to one of ordinary time skill in the art at the time of the invention to modify the system of Takiyasu (5537414) with the teaching of Takiyasu (5862142) to provide one of the first device and the further devices transmitting the further communication via the wireless communication link during the retransmission time slot assigned to the further communication in order to retransmit the lost data.

Therefore, the combined system would have been enable to guaranteed reliability.

12. In the claim 14, Takiyasu (5537414) discloses the first device (base station) and the further devices (source stations) maintaining information indicative of the length of the relationship period, the first device (base station) updating length information in response (ACK/NAK) to detecting step, and the further device (source stations) updating length information in response to transmitting step (see figure 4, col. 15, lines 14-67).

13. In the claim 15, 16, Takiyasu (5862142) discloses change in membership of group of further devices is increase in membership, and change in length of the

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retransmission period is a decrease in length (see figure 4, see abstract, the slots allocated to particular active users in the given frame are shifted by at least one slot position if the same users are allocated slots in the subsequent frame, see figure 9, col. 11 lines 40-67).

14. Claims 18-22, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system the combined system (Kou – Takayasu) in view of Gatherer et al. (U.S. Patent No. 6,396,457 B1).

In the claims 18, 12, 20, the combined system (Kou – Takayasu) discloses the limitations of claim 17 above.

However, the combined system (Kou – Takayasu) is silent to disclosing a Bluetooth master device, and wherein the wireless communication link is a Bluetooth ACL link, and communications and further communications include coded speech information.

Gatherer et al. discloses a Bluetooth master device, and wherein the wireless communication link is a Bluetooth ACL link, and communications and further communications include coded speech information (see col. 1, lines 50-5, col. 2, lines 1-3, col. 8, lines 10-14).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Kou – Takayasu) with the teaching of Gatherer to provide a Bluetooth master device and the wireless communication link is a Bluetooth link in order to uses retransmission of packet for guaranteed reliability.

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15. In the claim 19, Gatherer et al. discloses a base unit of a cordless telephone system (see col. 1, lines 50-5, col. 2, lines 1-3, col. 8, lines 10-14).

16. In the claim 21, Gatherer et al. discloses the wireless communication interface includes a switched antenna diversity section and a plurality of antennas (see figure 2, figure 3) coupled thereto for performing switched antenna diversity communication over the wireless communication link (see col. 1, lines 50-5, col. 2, lines 1-3, col. 8, lines 10-14).

17. In the claim 22, Gatherer et al. discloses the wireless communication interface includes a switched antenna diversity section and a plurality of antennas (see figure 2, figure 3) coupled thereto for performing switched antenna diversity communication over the wireless communication link (see col. 1, lines 50-5, col. 2, lines 1-3, col. 8, lines 10-14).

### ***Claim Objections***

18. Claim 3 is objected to because of the following informalities: "determining step includes the first device determining that the first device needs to retransmit to one of the further devices during the retransmission period a first packet that was transmitted by the first device to the one further device during the transmission period,....." should be "determining step includes the first device determining that the first device needs to retransmit to one of the first further devices during the retransmission period a first packet that was transmitted by the first device to the one further device during the transmission period,.....". Appropriate correction is required.

***Allowable Subject Matter***

19. Claims 3-7 are allowed.
20. The following is an examiner's statement of reasons for allowance: the prior art (5537414, 5862142, 5303234, 5602836, 5420851, 6026297, 6396457, 5684791) of record does not appear to teach or render obvious the claimed limitations in combination with the specific added limitations, as recited from dependent claim 3: "determining step includes the first device determining that the first device needs to retransmit to one of the further devices during the retransmission period a first packet that was transmitted by the first device to the one further device during the transmission period, and the first device also determining that the first device needs to transmit to a second further device during the retransmission period a second packet including an indication that the second further device should retransmit to the further device during the retransmission period a third packet that was transmitted by the second further device to the first device during the transmission period .

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong Ho whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00AM to 4:00PM.

21. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chuong Ho  
Examiner  
Art Unit 2664

10/06/04

A handwritten signature in black ink, appearing to be 'W. Ho', followed by a long horizontal line extending to the right.